

CHAPTER VIII

OCCUPATIONS, MANUFACTURES AND TRADE

OCCUPATIONS

BURDWAN with its coal and factories is much less dependent on agriculture than the average Bengal district. The statistics obtained at the census of 1901 show that 58.9 per cent. of the total population are supported by agriculture, a figure much below the average for the division. The agricultural population in all numbers 902,000. Of these only 32 per cent. including 3,800 rent-receivers, 251,000 rent-payers and 36,000 labourers, are actual workers. The industrial population accounts for 16.7 of the total, of whom about half are actual workers including 22,000 miners, 4,500 potters, 9,000 cotton weavers, 20,000 rice pounders and 2,000 masons ; goldsmiths, ironsmiths, sweetmeat makers, silk spinners and carpenters are also common. Commerce and the professions support a very small number, only 1.3 per cent. of the population being engaged in trade while 2.3 per cent. are dependent on the professions for their livelihood : of the latter 43 per cent. are actual workers including 8,000 priests and religious mendicants, 2,700 male and female doctors, and 1,100 teachers. About 113,000 persons are earth-workers and ground-labourers, and 16,000 are herdsmen. The following is a brief account of the principal manufactures and industries of the district.

COAL

The coal industry is naturally much the most noticeable feature of the trade and commerce of the district. In spite of the difficulties caused by the scarcity of labour and the shortage of wagons the industry has made very rapid strides of late years, and the number of mines rose from 37 in 1881 to 160 in 1901. In 1903 there were 110 mines with

an output of 2,759,000 tons, the number of work-people employed being 30,566, and in spite of the recent depression in trade the output has now (1909) increased to 3,414,628 and the number of work-people employed in the industry to 51,188. Most of the coal is sent by rail to Calcutta, and from there it is exported in large quantities to Colombo and Bombay. The miners are generally Bauris from Burdwan itself or Santals, who have immigrated from the neighbouring districts. It is quite common for all the members of a family to work in the same mine, and as a man's average wage is 12 annas a day the work-people are fairly prosperous. A full account of the Raniganj coal-field is given in Chapter IX.

FACTORIES

The discovery of coal and iron has naturally led to the establishment of factories in the neighbourhood of the collieries, and some of the most important industrial undertakings in Bengal are to be found in the Asansol subdivision.

THE BENGAL IRON AND STEEL WORKS, BARAKAR

The iron ore of the Raniganj field consists mainly of a clay iron ore somewhat altered at the surface and occurs in considerable abundance in the iron stone shale group of the lower division of the Gondwana system. The proximity of good coking coal at Barakar led to the formation there in 1874 of a company under the title of "The Bengal Iron Company" to work the ore. The Company, however, collapsed after five years and the concern was bought over by Government. It was afterwards sold to the Bengal Iron and Steel Company. These works are situated on the grand chord line of the East Indian Railway, a few miles from Asansol. They consist essentially of blast furnaces and a foundry. There are three blast furnaces which are all of the same type, with cup-and-cone arrangement for feeding and closing the mouth, and the hot blast is supplied by five tuyeres to each furnace. The blast is heated by Cowper

stoves, of which there are eight. The coke for the furnaces is at present largely obtained from Jherria, though it is seriously under consideration by the firm to make all their own coke so as to ensure uniformity of quality. The large percentage of ash in Indian coal and coke is one of the difficulties which beset the producer of pig-iron in this country. The ore is obtained over a considerable area in the Bengal coal-fields, and very different grade ores are obtained from the various workings. The ores all contain the iron in the form of Fe_2O_3 and some, *e.g.*, the Kalimati ores, are high grade and contain as much as 65 per cent. iron. The majority, however, contain a high percentage of silica, often as much as 20 per cent. With the present system of working, the various ores are mixed so as to feed the furnace with a material of constant proportions. The Company are, however, prepared to work with purer ore in one furnace so as to produce a hæmatite pig suitable for acid-hearth steel-making, if there is sufficient demand. The limestone used comes from Sutna.

The foundry which is close to the blast furnaces produces about 15,000 tons of castings per annum and is capable of making from 25,000 to 30,000 tons. The Barakar pig only is used for the foundries. The bulk of the castings are pipes and potsleepers, but a number of small and intricate castings are also made. At Barakar there is also a steel-producing and rolling plant (two 25-ton basic open-hearth furnaces and rolling plant to correspond) which was put up and commenced work in 1904, but was closed down and is now lying idle.¹

The total quantity of iron produced during 1908 was 48,906 tons valued at Rs. 27,13,625. The average number of operatives, employed daily, was 2,934, and most of them were housed in coolie lines near the factory. The system of working is by shifts in the iron works and blast furnaces, and by midday stoppages in the foundry. About 1,700

1. Monograph on Iron and Steel Works in Bengal, by G. R. Watson, Calcutta, 1907.

persons are daily employed in iron mining, in order to procure a supply of the mineral for the iron and steel works at Barakar. The ore is found (1) in thin alluvial deposits and soil at a number of places, (2) as masses of hæmatite and magnetite in metamorphic rocks at Kalimati in Singbhum, (3) in the ironstone shales of the Raniganj coal-field. The alluvial deposits were at one time worked by natives. The Raniganj ore is in the form of carbonate at depth, but it readily weathers and at the surface consists of hæmatite and limonite. The beds vary from 2 to 8 inches in thickness and form 1-17 of the whole series, which is 1,000 feet thick. About 50,000 tons of ore were won in 1901 from shallow trenches and pits. The success of the industry depends in a great measure on the coking qualities of the Bengal coal. The coke hitherto made in the Raniganj coal-field is inferior in quality, but both Giridih and Jherria furnish a hard coke suitable for blast furnaces, though rather high in ash.

There is also a small branch iron works at Barakar established by Messrs. John King and Company, Engineers and Founders of Howrah. The outturn is very small and for 1908-09 was valued at Rs. 11,250 only.

FACTORIES OF MESSRS. BURN AND CO.

In connection with their pottery works at Raniganj, Messrs. Burn and Company have opened lime-works at Andal and brick and tile works at Durgapur. At the Raniganj pottery, the only pottery in Bengal which is conducted on a large scale on western methods, the clays which are used are chiefly obtained from the coal measures of the neighbourhood and consist of decomposed shales. The works were commenced in 1866 by a Mr. Macdonald, and were taken over by Messrs. Burn and Company in 1869. The outturn in 1909 was valued at Rs. 3,18,467 and the number of operatives employed averaged 938. The work-people are for the most part housed in coolie lines near the factory, and the monthly wages paid for skilled labour vary from Rs. 15 for a potter to Rs. 20 for a fitter. The system of

working is by mid-day stoppages. Glazed drain pipes, bricks, tiles and every variety of pottery is manufactured. The outturn of the lime-works at Andal in 1909 was 138,381 maunds valued at Rs. 44,281, and 68 hands were employed, while at the Durgapur Brick and Tile Works the outturn for the same year was valued at Rs. 45,896. At present the average number of hands employed daily is 208.

The other important factories in the district are the Bengal Paper Mills at Raniganj opened in 1891, which during 1909 employed 1,074 hands and made 5,394 tons of paper valued at Rs. 16,36,119, and the Bengal Dyers and Skinners Company. The latter Company in 1900 opened works at Bansra near Raniganj and manufacture a tanning extract from myrobolams which is exported to Scotland. In 1909 the outturn was 293 tons valued at Rs. 35,160 and 76 operatives were employed. There are large railway works at Asansol and the Locomotive shop here employs on an average 113 hands. Finally there are seven oil mills in the district which are worked by mechanical power. The outturn during 1909 was 43,935 maunds of oil and 97,552 maunds of oil-cake valued at Rs. 7,42,787 and Rs. 1,54,563, respectively.

ARTS AND MANUFACTURES

SILK AND TASAR WEAVING

The silk-weaving industry, although a declining one, is still fairly prosperous, and during 1908-09 the total output was 70,000 yards of *tasar* and 48,430 yards of silk, valued at Rs. 75,000 and Rs. 37,679, respectively. It is carried on at Bagtikra, Musthali, and Ghoranash in the Katwa subdivision and at Memari, Jagdabad, and Panchkola in the Sadar. *Tasar* cocoons are not reared locally but are imported from the Santal Parganas and from Orissa. The *tasar* cloth produced at Bagtikra and Memari is of excellent quality, and is exported as far as Madras and Bombay, where there is a considerable demand for it, but most of the cloth produced elsewhere is sold locally. The silk is made into pieces with embroidered edges which are used for *dhutis*, *saris*, *chadars*,

napkins and *mooka* (turbans). They are sold preferably to dealers of native firms who come round and the prices average about Rs. 8 or 9 for a piece of *garad* silk 10 cubits long and Rs. 7 or 8 for a piece of *tasar* silk of the same length. In some cases the *Mahajans* advance the money to the weavers to buy yarn from the dealers and then buy the silks when manufactured. A few of the weavers bring their produce into Burdwan and by thus avoiding the middlemen make better profits. The majority of the Katwa silk goes to Calcutta where it is sold exported. The Muhammadans of Madras who use long pieces 21 feet by 3 feet for their turbans are the largest consumers. The following account of the industry is taken from Mr. N. G. Mukherjee's Monograph on the Silk fabrics of Bengal.¹

"In the Kalna subdivision no weaving is carried on, but cocoons are reared to a certain extent, and a good deal of *tasar* yarn is also manufactured. Cocoons are raised at Serampur, Kaknail and Khaiduttpara. Spinning is carried on at the above-mentioned villages, and also at Satni, Sigubagh, Hamedpur, Gachee, Pathangram, Khanpur, Hat Tare, Nakdaha and Hapania. Employment is given to about 3,000 people, mostly engaged in cultivation, who eke out their agriculture by raising cocoons and by spinning the thread. By caste they are chiefly Satgopes, Chandals, Gandhabanias or Mussalmans.

"The yarn costs about Rs. 15 to Rs. 16 a seer. This is manufactured into articles which sell at the rate of Rs. 8 or Rs. 9 per piece of 10 cubits, of which $2\frac{1}{2}$ to 3 pieces can be manufactured in a month, and the average net income of a weaver would thus be Rs. 8 to Rs. 12 a month. *Garad* silk requires more skill and care than *tasar* silk but the wages obtained are quite as high. The cocoons cost Rs. 12, and Rs. 2 go to the women for making the yarn, and there are incidental expenses for dyeing, etc., which make the cost about Rs. 15 a seer, which is about the same as for

1. Calcutta, 1903.

tasar silk. The same quantity is woven, and pieces 7 cubits long are turned out to the number of three to four per month. It is said that a thoroughly energetic and skillful man could make Rs. 15 a month, but, on the other hand, the ordinary weaver's wages are nearer the lower limit than the higher.

"The caste rank of the weavers is fairly high, being inferior only to Brahmans, Baidyas, and Kayasthas. Financially their position is not very high, and is sinking along with their industry. In the Katwa subdivision, *tasar* cocoon-rearing, silk-spinning and weaving are carried on in the following villages: Bagtikra, Goalkanigi, Madhatpur, Musthali, Amdanga, Ghoranash, Panchberia, Jagadianandapur, Chandal, Sribati, Multi, and Maygachi. Employment is given to about 5,000 families.

"Various castes take part in the growing and spinning, but the weavers are Tantis of the Navasak caste, which is only inferior to Brahmans, Baidyas, and Kayasthas. No cocoons from which *resam* or *garad* might be manufactured are grown in this subdivision or imported: all importations are in the form of yarn. Cocoons for *tasar* silk manufacture are grown at Kalna along the banks of the river, and are also imported from various places, of which Chaibassa in Singhbhum is the most favoured. Sonamuki in Bankura, Hunsongoon in Cuttack, and some places in the Santal Parganas also send cocoons. These are imported by Uriya merchants and also by traders from Rajgram, Bankura and elsewhere: at Katwa there are also a few merchants who import.

"The cocoons are of various classes, viz.—

(1) *Daba*, the best quality, comes exclusively from Chaibassa in Singhbhum; one *kahan* makes two seers of yarn. Its price is Rs. 10-8 to Rs. 12-8 for one *kahan* = 1,280 cocoons.

(2) *Bagai*, which also comes from Singhbhum, produces $1\frac{1}{4}$ to $1\frac{1}{2}$ seers of yarn per *kahan*, and its price is Rs. 7-12 to Rs. 9 per *kahan*.

(3) The *mugo*, which comes from Hazaribagh, produces $1\frac{1}{4}$ to $1\frac{3}{8}$ seers of yarn per *kahan*, and its price is Rs. 7 to Rs. 8-8 per *kahan*.

(4) *Jaidui* or winter cocoon is a quality imported from various places in the cold weather : it produces only 12 to 13 chitaks of yarn per *kahan*, and is sold at Rs. 3 to Rs. 5 per *kahan*.

"Yarn for *tasar* manufacture is prepared in the following way :

If the cocoons are not dead, they are hung in a cloth over boiling water until they become so. After being dried in the sun, they are placed in a vessel containing water, cattle-urine, and potash of *saji* water (the former being preferred at Katwa, the latter in the Sadar) and boiled for about an hour. As they become soft they are taken out and peeled by the finger and placed in a stone vessel. The spinning is done by the women of the family, while the males weave or engage in other occupations. The spinner takes hold of the cocoon and pinches it and draws out the clue. The thread is wound on to a bamboo frame (*latai*) which is held in the right hand. The cocoons are kept on the left side of the spinner, and as the thread passes over the right thigh, it is twisted with the left hand before it passes on the *latai*. The women manage to weave about two seers of yarn a month, and they sell the best quality yarn for Rs. $12\frac{1}{2}$ to Rs. 14 a seer. As the price at which they purchased the cocoons of the best sort was Rs. 10-8 to Rs. 12-8, their average monthly earnings are rather under Rs.2. One anna a day is about the rate of wages prevalent."

COTTON WEAVING

The cotton weaving industry, although declining rapidly as a result of European and Indian competition, still affords employment to a considerable number of weavers. The chief centres of the industry are Purbasthali, Kalna and Manteswar, and in these three places nearly 2,000 persons were daily employed as weavers during 1908-09. There are so cotton

weaving establishments at Ichagram, near Memari and at Bahadurpur, Baje, Ittā, and Srikrishtapur in thana Jamalpur. At Ichapur only coarse cloths and napkins are prepared, but at the other places mentioned very fine cloths are made. The produce is usually sent to Howrah, but there is some local consumption. The district outturn of cotton cloth for the same year was 2,585,400 yards, valued at Rs. 2,81,378. In 1898 the Collector reported as follows on this industry:

"In the Katwa subdivision the cotton industry is carried on principally by the weaver caste among the Hindus. On account of the wide use of European piece-goods, which are cheaper and finer in quality, the indigenous industry is gradually disappearing. Large numbers of weavers have abandoned their looms and have taken up other pursuits. Indeed, very few families are to be found now who are wholly engaged in weaving alone. Their present number does not admit of any appreciable comparison with that which existed in the past, and as such, no endeavours have been made to collect figures indicating the number now engaged in this district."

These remarks still hold good. It is true that the Swadeshi movement has created a desire among the educated classes to support home industries. But economically it seems impossible that the hand-loom should ever compete successfully with machinery. There are 55 fly-shuttle looms in use at Kalna and they have also been introduced into the Asansol subdivision with some success. Elsewhere, although the looms have been introduced, they are not popular.

IRON-WARE AND CUTLERY

Iron utensils are made locally throughout the district. The most common types of blacksmith, the man who has not specialised in any branch of his trade, requires next to no tools or outfit. A hearth, a bellows to supply a blast of the fire, an anvil, a few pairs of tongs, a few hammers, and a cold chisel complete his outfit. His work is entirely carried on in a small shanty not more than 10 feet by 10 feet. The

ordinary village blacksmith in Burdwan is usually paid by contract for repairing the agricultural implements of the village and often in kind, but for the manufacture of new implements he is paid in money and according to the price of the article.

The manufacture of cutlery is carried on in Burdwan town. The following is an account of the process of manufacture in what are probably the best cutlery shops in Bengal :¹

"The blade of a knife, or scissors, is first of all fashioned by the blacksmith. His implements are an anvil, bellows, a hammer, chisel, and a pair of pincers. He heats the iron or steel in the furnace and beats it to the required shape and size on the anvil. A skilful blacksmith can thus fashion 72 knife blades during the course of the day, two inches to three inches in length, by a quarter of an inch in breadth. The blacksmith then hands the rough blades to the grinders and polishers.

"There are two kinds of hones for grinding, polishing, and sharpening blades. The first is of ordinary sand found on the banks of rivers and is used for rough work. The second is of very fine grit, obtained by crushing what appears to be a very close grained sandstone, called locally '*kruich pathar*.' The solid wheel is about 15 inches in diameter, and its polishing edge is about a quarter of an inch in breadth. The cutler squats on his hems over the revolving polishing wheel, takes the knife or scissor blade in both hands and applies it to the revolving edge of the polishing and sharpening wheel, dipping the blade in cold water, whenever it becomes too hot to hold. The skilled artisan does the preliminary polishing and grinding on the sand wheel. He then makes over the blade to a confrere who proceeds to apply it to the '*kruich pathar*' polishing and sharpening wheel. When the blade is sufficiently sharp and polished, it is handed over to another artisan, who fixes it

in a vice, drills the necessary holes, shapes the brass, horn, or ivory for the handle, and fixes the blade thereto. The brass is in thin sheets, and is readily cut with a pair of steel shears made in the workshop. The horn, or ivory, is cut with a saw made locally or imported. It is shaped with a file and fixed to the blade. The horn or ivory is also highly polished by rubbing it in a mixture of brick dust, charcoal and oil. Finally, the knife is again polished on the '*kruich pathar*' hone. In the case of a highly skilled artisan the polish is mirror-like, and equal to that of the imported article ; the edge is also equally keen and fine. The operation in the case of a scissor blade is somewhat different. The blade and thumb-ring are polished and rounded on the revolving hones. The blade is then fixed in a vice, and the operator proceeds to polish the ring and the lower parts with an instrument called a '*maskolla*'. The holes for screws and nails are drilled with an instrument called a '*bhumar*'. This is a steel drill made in the workshop ; it is 2 or 3 inches in length and is fixed to a round wooden handle about 8 to 10 inches in length. It is pointed instrument, and when worked with a bow rapidly bores its through brass, horn, ivory, iron and steel.

"In the case of the razor blade the process is identical. The blacksmith gives it birth on the anvil ; it is then passed over to the polisher and the driller. But very few artisans make razors, and only one or two cutlers lay claim to be able to fashion razor blades of superfine quality. The brittle nature of the steel, and the delicacy of the blades, demand an exquisite judgment and gentleness of touch on the revolving hone. A good razor blade has also to be manipulated with great patience ; the skilled artisan working from morning till evening cannot turn out more than two such blades a day : and his profit is not more than 4 annas per rupee. The price of these blades varies according to size and quality from Re. 1-4 upwards.

"The final polishing is done with brick-dust, charcoal and oil. The revolving hones last a month and a half in the case of the sand wheel and 3 months in the case of the

1. Monograph on Iron and Steel Works in Bengal, by G. R. Watson, Calcutt 1907.

'*kruich pathar*' wheel. In large workshops half-a-dozen such wheels may be seen spinning, so that the blacksmith is frequently under the necessity of making fresh ones. Dies for stamping the artizan's name on the heel of the blade are made of steel locally; and I have no doubt that an unscrupulous artizan is able to forge the trade-mark and name of a European cutler."

The industry is not in a particularly flourishing condition and the occupation is said to be unhealthy. During 1908-09 the outturn of cutlery for the district was 1,458 dozen.

BRASS

Brass and bellmetal ware is manufactured on a large scale in the district at Banpas in the headquarters subdivision and at Dainhat and Begunkhota in Katwa. The brassware industry in the latter subdivision is however declining, as, owing to the silting up of the Bhagirathi, there is great difficulty in exporting the manufactured articles. The wares manufactured at Banpas are preferred for their superior polish and make. During 1909 the outturn was estimated at 6,401 maunds valued at Rs. 2,80,306.

OTHER INDUSTRIES

Biris are manufactured at Asansol and it is reported that they are gradually taking the place of cigarettes. Mats are made in considerable numbers in the neighbourhood of Purbasthali and 220 persons were engaged in this manufacture in 1908. There are flour-mills in Asansol and Raniganj, and ice and aerated water are manufactured for local consumption at Burdwan, Asansol, Raniganj and Sitarampur. Earthen pots are made in every village for local consumption, and molasses and oil and oil-cake are also manufactured locally. At Dainhat and Katwa there are four families of sculptors who carve Hindu idols in black and white stone which is imported. The work is not of a high class. The finished articles are mostly sold locally, but are occasionally exported to Calcutta. At Nilpur, a suburb of Burdwan town, mosquito curtains of cotton thread are made

by the Muhammadan weavers, which are imported in some quantity to Calcutta. Indigo was formerly manufactured on a considerable scale in the Kalna and Bud-bud thanas, and so late as 1877 the area under cultivation was estimated at 16,000 acres and the outturn at 1,640 maunds. Most of the Burdwan factories were under native management and as they failed to secure uniformity in the colour of their indigo, the price obtained for the dye in Calcutta was usually only between Rs. 100 and Rs. 200 a maund even in the best days of the industry. It has now practically died out entirely.¹

TRADE

Excluding coal and iron the chief articles of export are rice, pulses of all sorts, rape-seeds, and oil and oil-cake, while the imports are English and Indian cotton piece-goods, salt, spices, kerosine-oil and castor-oil. The imports and exports are mostly to and from Calcutta, but there is a considerable export of grain to the west. The district is very well provided with communications and most of the important marts enjoy ample facilities for export and import by rail, road, or river. The chief centres of trade are the towns of Raniganj, Asansol and Burdwan, and the railway stations at Memari, Mankur, Panagar and Guskhara which are important distributing centres. A considerable trade in timber is carried on in the towns of Burdwan and Raniganj. The wood is brought from the forests near Chaibassa, Chakradharpur, and Maurbhanj by rail, and is chiefly *sal*. The importance of Katwa and Kalna, which were formerly regarded as the ports of the district, has declined since the opening of the East Indian Railway on which the great bulk of the trade is now carried. A small proportion, however, is still carried by river, and the silting up of the Bhagirathi below Katwa has affected the trade of that town seriously. The town is served by steamers for a portion of the year when there is sufficient water in the river. During the rest of the year its trade is carried by carts or country boats and a good deal is sent

1. Statistical Reporter, April 1877.

by the Ranaghat-Murshidabad line. The Katwa line from Hoogli, which is now under construction, will probably stimulate further developments. The internal trade of the district is mostly carried on by means of permanent markets and also by *hats* and fairs.

WEIGHTS AND MEASURES

The steady extension of the coal industry and the industrial development which has resulted from it has naturally led to the standardization of weights in the district. In Asansol, Raniganj and Burdwan, the three chief industrial centres, the only weight in use is the standard *seer* of 80 *tolas*. Elsewhere and for agricultural produce generally the *seer* commonly in use is the so-called *Kacha seer* of 60 *tolas*. This is used in Burdwan for agricultural produce and in most of the principal marts such as Ausgram, Raina, Manteswar, Jamalpur, Khandagosh, Satgachia, and Galsi. At some of the principal markets both *seers* are used; for instance, at Kaksa, Purbasthali, Memari and Sahebganj coal and oil-cake are sold by the standard *seer* and agricultural produce, fish, and sweetmeats by the *kacha seer*. At Katwa four *seers* are reported to be used of 58, 60, 80, and $82\frac{5}{8}$ *tolas*.

The standard cubit (*hath*) is now everywhere 18 inches. As regards Government lands it appears to have been converted from the old cubit of 20 inches by an order of the Board of Revenue in 1849. The cultivators however usually claim the old cubit of 20 inches called by them the *Sikandari hath*, after, it is said, some long-armed Muhammadan of that name. Measurements, except in the Government estates, are very uncommon.